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RESEARCH ARTICLE

The Impact of Illness Perception on Delay in Seeking Medical Help in Patients with Acute Chest Pain: A Cross-sectional Study in the United Arab Emirates

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Abstract:

Background:

The concern of contracting COVID-19 has prevented numerous individuals with ambiguous myocardial infarction symptoms from seeking medical attention, leading to delayed presentation and treatment of acute coronary syndrome (ACS). This delay could increase the risk of long-term consequences.

Aim:

The aim of this study is to evaluate the impact of illness perception on delay in seeking medical help in patients with acute chest pain in UAE during COVID-19 pandemic.

Methods:

A descriptive cross-sectional design was used.

Results:

A total of 222 in-patients participated in the study, with an average age of 54.3 years ($SD=14$, Range= 20-86). The average score of illness perception was 5.66 ($SD=0.92$), which indicates that CVD was perceived as moderately threatening to physical and emotional status. Univariate analysis showed that illness coherence having previous cardiac catheterization, diabetes and asthma were factors associated with delay in seeking medical services. The linear regression showed that college education was a strong predictor of delay, while a history of asthma and undergoing cardiac catheterization were independent predictors of shorter delay.

Conclusion:

Illness coherence perception and time of seeking medical help are correlated. In addition, illness perception of personal control is low, which indicates the need for educational intervention. Other clinical factors also impact patients' decisions, such as previous cardiac intervention and comorbidity, highlighting the target group for further attention from the healthcare team.

Keywords: Acute chest pain, Illness perception, Delay in seeking medical service, COVID-19, ACS, Patients.

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1. HIGHLIGHTS

1. Patients with CVD are at greater risk of delay in seeking medical help, particularly during COVID-19 pandemic.

2. Cognitive and emotional representations of symptoms

associated with a patient's decision to seek medical help.

3. Patients with no previous medical history of CVD are at greater risk from delay in seeking medical help.

4. Educational intervention emphasizing symptom knowledge, and clear any misconception about controlling CVD risk factors, is needed to modify illness perception.

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2. BACKGROUND

Cardiovascular disease (CVD) and related problems have increased in developing countries, becoming a primary challenge to healthcare services. Although the quality of healthcare in the United Arab Emirates (UAE) was rated tenth worldwide in 2018 [1], the prevalence of the chronic disease is still noticeably increasing, resulting in seven out of ten deaths in UAE. The most common cause of death in UAE in 2016 was CVD (40%) followed by injury (17%), cancer (12%), communicable diseases (6%), respiratory diseases (5%), and diabetes mellitus (DM) (5%) [2].

Survival rate from Acute coronary syndrome (ACS) can be significantly improved by up to 50% if patients receive treatment within one hour of the onset of initial symptoms [3, 4]. Despite the significant improvement in emergency care for the detection and recognition of CVD symptoms, the delay from the onset of symptoms to starting medical interventions remains a universally unresolved problem. The average delay in seeking medical help, as recorded in the literature, ranged from 2.2 to 7.8 hours [5, 6]. There are three main reasons for the delay: patient-related, transport and hospital-related delay. Patient-related delay refers to the time from the onset of symptoms to make the initial decision to seek medical assistance [7, 8]; this depends on the patients' perception and beliefs about their disease, which was found to be more challenging than transport and hospital delays [7, 9].

Several factors contribute to the delay in seeking medical help, and previous studies found financial problems, lack of health insurance, and lack of time as the most common causes [10, 11]. Furthermore, some patients hesitated because of misunderstanding the nature of their pain and other cardiac-related symptoms [5, 8, 11, 12]. Mistrust between the patient and the physician as a result of delayed attention from the physician and other healthcare providers was also reported [11], as were psychological problems such as anxiety and fear of the hospital and medical equipment [13]. Finally, socio-demographic factors were found to extend the delay in seeking medical help, for example, being older, female, living a long way from a medical institution, and having a low educational level [4, 6]. However, there is no agreement with regard to the patient's medical history, such as DM, HTN, angina or myocardial infarction (MI) and other comorbidities [4, 7 - 9].

Personal perception about illness has been found to be associated with adherence to healthy behaviours, and this could contribute to patients' decisions to seek medical assistance [5, 6, 14]. Determining the factors associated with seeking medical help within the UAE is urgently required because it plays a critical role in improving health outcomes and reducing mortality due to ACS [10].

The COVID-19 pandemic has led to a reduction in the rate of acute coronary syndrome (ACS) presentations to hospitals and a delay in seeking medical care for ACS, leading to prolonged time from symptom onset to hospital presentation and primary percutaneous coronary intervention (PCI) [15].

In the UAE, a recent retrospective study compared the seeking time during the COVID period (2020) with the historical record pre-COVID. The results showed a significant

delay in the COVID-19 period compared to the historical control period, with a median time from symptom onset to hospital presentation of 24 hours *versus* 6 hours ($p < 0.001$). A significantly higher proportion of patients in the COVID-19 period presented after 24 hours of symptom onset compared to the historical control period (26.2% *vs.* 3.7%; $p < 0.001$). The study concluded that UAE patients with ACS are hesitant to seek medical care due to fears of exposure to the virus [16].

Emirates Intensive Care Societies have reported a decrease in admissions of ACS patients during the pandemic, ranging from 30% to 60%, which highlights the consequences of delayed medical care-seeking. They also found that 15% of ACS patients were young, COVID-19-positive individuals without any comorbidities but had a higher thrombosis burden. In addition, some asymptomatic COVID-19 patients exhibited extremely abnormal chest X-ray results and presented with myocardial infarction [17].

3. THEORETICAL FRAMEWORK

The self-regulation model of illness perception describes the cognitive responses that patients generate about their illness, influencing the choice and appraisal of coping strategies of patients with acute stressors and contributing to their decision to seek medical help [18]. The model identified five dimensions of illness presentation. The Illness Identity dimension represents how people label their disease (*e.g.* MI, angina, asthma) and its symptoms (*e.g.* chest pain, breathlessness). The Cause dimension represents patients' perception of the underlying cause of the illness (*e.g.* stress, smoking, mental attitude, overwork). The Consequences dimension represents beliefs regarding the impact of the illness on all dimensions of health-related quality of life (physical, social, and psychological). The timeline dimension refers to personal beliefs about whether the illness will be acute, chronic, or cyclical in nature. Finally, the Curability or Controllability dimension reflects individuals' beliefs about whether the illness is curable or controllable and beliefs regarding the ability of the patient or others to influence the course of the illness.

Medical services, including access to medical care, have been disrupted significantly during the 2019 pandemic coronavirus disease (COVID-19). Healthcare facilities applied a very restricted policy to limit non-emergency hospital admissions in order to contain the spread of COVID-19 [19]. To date there is limited evidence on healthcare service utilization during the pandemic. It is unclear if the healthcare policies, such as social distancing and staying at home, have encouraged patients to avoid seeking medical help [20]. We propose that concern over COVID-19 could delay seeking medical assistance among ACS patients.

The predictive value of illness perception in explaining the delay in seeking medical help has never been explored among ACS patients, particularly patients with acute chest pain. Therefore, this study aims to evaluate the impact of illness perception on this delay among patients with acute chest pain in UAE during COVID-19. Specifically, it will answer the following questions:

1. What is the actual time of seeking medical help among

UAE ACS patients presented to hospital with acute chest pain?

2. How do UAE patients with acute chest pain perceive their illness?

3. Is there a relationship between illness perception and time of seeking medical help among UAE patients with acute chest pain?

4. What are the predictors of time of seeking medical help among UAE patients with acute chest pain?

4. METHODS

4.1. Design & Setting

A descriptive cross-sectional design was used with self-administered questionnaires distributed in the cardiac wards of three hospitals in the Northern Emirates, Sharjah and Fujairah, between January and July 2021.

4.2. Sampling

Patients with chest pain admitted to cardiac units at Ministry of Health and Prevention (MOHP) hospitals in Fujairah and Sharjah Emirates were targeted to participate. A convenience sampling approach was followed. Patients were eligible if they were 18 years or older, had a history of CVD, were admitted to a hospital with chest pain, free from mental illness, and were able to communicate. Participants completed the study questionnaires within two days of hospitalization.

4.3. Instrument

The study survey consists of two parts. The first part evaluated participants' sociodemographic and clinical characteristics, including age, gender, height and weight, marital status, smoking status, employment status, educational level, current medical history (HTN, DM, respiratory and joint problems), and the number of previous hospital admissions in the past year. The dependent variable, delay in seeking medical help, was operationalized as the time from the onset of symptoms to seeking medical help. Participants were asked to indicate for how long they had chest pain before they decided to seek help (e.g., calling an ambulance or going to the hospital). Medical records were checked to determine and confirm the time of arrival at the emergency department.

The second part of the survey evaluated patients' perception of illness using the Brief Illness Perception Questionnaire (IPQ), which has nine items rated on a 0 to 10 response scale except for the causal question [21]. Item 1 asks: "How much does your illness affect your life?" 0 means not at all, 10 means severe impact on life. The Cognitive Illness Representations subscale consists of five items: Consequences with higher scores representing a stronger belief that the illness will have serious consequences; Timeline with higher scores indicating a belief that the illness will last for a longer time; Personal control and Treatment control, with higher scores indicating a higher level of belief in control or potential for cure of the illness; and Identity (symptoms). The Emotional Representations subscale includes Concern and Emotions, with higher scores indicating greater worries about health status.

One item assesses illness comprehensibility with higher scores indicating a better understanding of the illness. Assessment of the causal representation is by an open-ended response item that asks patients to list the three most important causal factors of their illness. The internal reliability for each subscale is satisfactory, with Cronbach's alpha coefficients ranging from 0.73 to 0.82 among participants previously diagnosed with MI [21]. The Arabic version of IPQ has been used in previous research among cardiac patients and was found to have an acceptable Cronbach's alpha (0.76) [14].

4.4. Ethical Issues

Data were collected between January and July 2021 after obtaining ethical approval from MOH (MOHAP/DXB-REC/JJF/NO.9 2020) and the targeted hospitals. The research assistants administered the study questionnaires through face-to-face interviews and reviewed patients' electronic medical records to confirm the clinical data and arrival time at medical services. Each participant received verbal information about the study, a patient information sheet and a consent form. Respondents were assured that their participation was anonymous, would not interfere with their medical treatment and that they could withdraw from the study at any time with no consequences.

4.5. Statistical Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 21, and a P-value of <0.05 was considered significant in all the statistical tests performed. The mean waiting time before seeking medical help was normally distributed. A series of independent sample t-test and analysis of variance (ANOVA) and Pearson Correlation coefficient tests were performed to detect any significant association for delay with participants' characteristics. The Pearson Correlation coefficient test was used to examine the association between the time of seeking medical help and patients' illness perceptions. Finally, multiple linear regression analysis was conducted to identify predictors of the time of seeking medical help.

5. RESULTS

5.1. Sociodemographic and Medical Characteristics

Two hundred and twenty-two in-patients participated in the study, which represents 89% response rate. The average age was 54.3 years ($SD = 14$, Range = 20-86), with male (55%), married (37.6%), unemployed (62.2%) and educated to college level (49.1%). Participants were from various areas of Fujairah (49.5%) and Sharjah (50.5%). In relation to participants' medical history, 48.2% had a history of MI, 27.5% had undergone heart surgery, and 25.2% had cardiac catheterization. The average hospital readmission over the last 12 months was 2.05 (Range = 0-8). Only 24.3% reported a history of COVID-19 infection, and 17.1% had received the vaccine. On average, participants waited for more than four hours before seeking medical help ($M = 4.38$, $SD = 1.61$) with a range from 1 to 12 hours. Table 1 shows detailed participants' characteristics.

Table 1. Socio-demographical characteristic of participants (N=222).

	n (%)	Mean (SD)
Age	-	54.3 (14)
Waiting time before seeking medical help (Hours)	-	4.38 (1.61)
Previous admissions during the last 12 months	-	2.05 (1.96)
Gender	-	-
Male	122 (55)	-
Female	100 (45)	-
City	-	-
Fujairah	110 (49.5)	-
Sharjah	112 (50.5)	-
Marital Status	-	-
Married	118 (53.2)	-
Single	61 (27.5)	-
Widowed/separated	42 (19.3)	-
Working Status	-	-
Employed	84 (37.8)	-
Unemployed	138 (62.2)	-
Educational Level	-	-
Less than high school	60 (27.1)	-
High school	53 (23.9)	-
College/university	110 (49.1)	-
Comorbidity	-	-
Myocardial infraction	107 (48.2)	-
Heart surgery	61 (27.5)	-
Cardiac catheterization	56 (25.2)	-
Hypertension	172 (77.5)	-
Hypercholesteremic	149 (67.1)	-
History of diabetes	121 (54.5)	-
Arthritis	59 (26.5)	-
Asthma	58 (26.1)	-
History of COVID-19	54 (24.3)	-

Table 2. Mean Score of BIP-Q and correlation with delay in seeking medical help.

BIP Subscale	Mean (SD)	Correlation with Delay in Seeking Medical Help
Consequences	6.63 (2.64)	0.065
Timeline	6.86 (2.37)	0.109
Personal control	5.09 (2.61)	0.022
Treatment control	6.39 (2.13)	-0.60
Identity	6.09 (1.75)	-0.084
Illness concern	7.77 (2.03)	-0.061
Coherence	7.35 (1.59)	- 0.163*
Emotional representation	6.82 (2.41)	-0.053
Average score	5.66 (0.92)	0.048

Note: *Pearson Correlation coefficient, * $p < 0.01$.

5.2. Participants' Illness Perception

Table 2 shows the mean scores and standard deviations of the subscale of illness perception. High scores were obtained in the illness concern ($M = 7.77$, $SD = 2.03$), emotional representation ($M = 6.82$, $SD = 2.41$) and consequences subscales ($M = 6.63$, $SD = 2.64$), indicating that participants perceived their illness as threatening to their lives and affecting

their emotions and causing some physical consequences. The high score for coherence indicated that participants understood their disease very well. The mean scores for personal control and treatment control indicate participants did not strongly believe that their CVD could be controlled by personal behaviour, although they believed that it would be controlled by current medical treatment. Finally, the average score of illness perception was 5.66 ($SD = 0.92$), which indicates that

CVD was perceived as moderately threatening and impacting physical and emotional states.

5.3. Participants’ Illness Perception and Delay in Seeking Medical Help

The results of bivariate correlation between delay in seeking medical help and IP-Subscales are presented in Table 2, which revealed that only illness coherence ($r = -.163, P = 0.015$) was associated with delay; this indicates that participants who did not understand their disease took longer to seek medical help.

5.4. Association of Delay with Participants’ Characteristics

Participants’ age and hospital readmission had a weak association with delay ($r = -.118, P = 0.078$) ($r = .115, P = 0.086$), respectively. The result of One-Way ANOVA revealed that participants with an educational level below high school

had a significantly shorter delay than those who had a high school or college educational level ($F(2, 219) = 5.084, P = 0.007$).

Given the small sample size, equal variance was not assumed, so the Welch t-test was conducted to assess the differences in time for seeking medical help based on participants’ medical characteristics (Table 3). The results revealed that participants sought help more quickly if they had undergone cardiac catheterization ($t = 3.77, 95\% \text{ CI}; 0.43-1.39, P < 0.001$), had DM ($t = 2.24, 95\% \text{ CI}; 0.05-0.90, P = .026$) or asthma ($t = 2.04, 95\% \text{ CI}; 0.067 - 0.93, P = .024$). Patients who had a history of COVID-19 and had not received the vaccination sought medical help sooner than those who had no history or who had received the vaccine. However, these differences were not statistically significant ($P > .005$). No other variables showed a significant difference in the time of seeking medical assistance.

Table 3. The association between seeking medical help and participants’ characteristics

	Mean (SD)	P
-		
Age	$r = -0.118,$	0.078
Hospitalizations over the last 12 months	$r = 0.115,$	0.086
Gender	-	-
Male	4.22 (1.57)	0.109
Female	4.57 (1.63)	-
Marital Status	-	-
Married	4.42 (1.67)	-
Single	4.41 (1.60)	0.683
Widowed/separated	4.18 (1.61)	-
Working Status	-	-
Employed	4.35 (4.36)	0.794
Not employed	4.41 (3.28)	-
Educational Level	-	-
Less than high school	3.9 (1.32)	0.007*
High school	4.13 (1.54)	-
Collage/university	4.71 (1.72)	-
Myocardial Infraction	-	-
Yes	4.10 (1.40)	0.096
No	4.55 (1.80)	-
Heart surgery	-	-
Yes	4.53 (1.75)	0.0382**
No	4.32 (1.55)	-
Cardiac Catheterization	-	-
Yes	3.69 (1.42)	< 0.001**
No	4.61 (1.61)	-
Hypertension	-	-
Yes	4.31 (1.59)	0.260**
No	4.61 (1.69)	-
Hypercholesteremic	-	-
Yes	4.36 (1.57)	0.864
No	4.40 (1.69)	-
Diabetes	-	-
Yes	4.16 (1.65)	0.026
No	4.64 (1.53)	-
Arthritis	-	-

(Table 3) contd....

	Mean (SD)	P
-		
Yes	4.51 (1.33)	0.024**
No	4.01 (1.69)	-
Asthma	-	-
Yes	3.83 (1.36)	0.001**
No	4.57 (1.65)	-
History of COVID-19	-	-
Yes	4.37 (1.59)	0.812
No	4.43 (1.68)	-
COVID-19 Vaccination	-	0.596
Yes	4.51 (1.60)	-
No	4.36 (1.62)	-

Note: * ANOVA test

** Welch t-Test: Equal variances not assumed

Table 4. Multivariate predictors of delay in seeking medical help

	β	t	Sig.	95.0% CI	
				Lower Bound	Upper Bound
College educational level	0.219	2.877	0.004	0.223	1.194
High school	-0.111	-1.88	0.096	-0.790	0.064
Cardiac catheterization	-.200	-3.07	0.002	-1.22	-0.267
Asthma	-.148	-2.392	0.024	-1.018	-0.071
High school	-0.006	-0.06	0.946	-0.636	0.594
Illness Coherence	-0.122	-1.796	0.074	-0.260	0.012

Note: a. df, 6= F= 6.75, p<0.001, with R² of 0.16.

5.5. Predictors of Delay in Seeking Medical Help

Multivariate linear regression models were constructed with factors that emerged from the univariate analysis as having significant associations with the time taken to seek medical help (Tables 2 and 3). The categorical variables that showed significant differences were dummy-coded and entered into the regression model. After controlling for all other variables, the results revealed that educational level, and comorbidity, such as asthma and cardiac catheterization, were independent predictors of seeking help. This model significantly (F = 7.58, p<0.001) explained 15% of the variance in delay. The strongest predictor of delay was college education level (B = 0.232, P = 0.003). Having a history of asthma (B = - 0.161, P = 0.014) and having undergone cardiac catheterization (B = - 0.216, P = 0.001) were independent predictors of shorter delay (Table 4).

6. DISCUSSION

This study examined the association between illness perception, participants’ social and clinical characteristics, and their role in predicting the time taken before seeking medical help, among patients admitted to cardiac wards with acute chest pain in several centres in the Northern Emirates. It appears to be the first in which illness perception and the ability to predict a delay in seeking medical help have been analyzed in the UAE or a Middle East population.

This study revealed that, on average, participants waited for four hours before seeking medical help, which is considered close to what has been found in a systematic review among patients with chest pain (Median = 3.4 hours, Range = 1.6-12.9

hours) [4]. In the most recent study, it was found that the average time among male patients in their 40s was 18 hours, and for patients in their 50s was 9.8 hours [22]. However, this study focused on patients with chest pain regardless of the medical diagnosis. In contrast, other studies found shorter delays among acute coronary syndrome patients (MI and unstable angina), leading to differences in symptoms presentation that may have influenced the patients’ decision to seek medical help [23]. Also, the data for this study was collected during the COVID-19 pandemic, when several health facilities across UAE changed the criteria for hospital admission, giving priority to life-threatening conditions. The most recent American study revealed that around 40.9% of adults avoided medical care during the pandemic because of worries about COVID-19; 12% avoided urgent care, and 31.5% avoided routine care [19]. In our study, participants infected with COVID-19 pursued medical service in a shorter time than those who had not had the infection; however, this difference was not statistically significant.

The study revealed that participants perceived CVD as a threatening illness that would last for a long time. It also found that participants did not strongly believe that their behaviour could control CVD. In contrast, they had a strong belief that CVD could be controlled by medical treatment. Rahman et al. (2015) found similar findings, that patients strongly believed CVD risk factors to be controlled by medication, although they were resistant to behaviour modification [24]. Resistance to exercising was also reported by many studies among patients with coronary heart disease [5, 25]. These results indicate that interventions are urgently required to highlight the vital role of lifestyle modification in the treatment plans for patients with

CVD. A successful intervention has to be tailored according to the learning needs of targeted patients. This study also found that participants believed CVD to be a permanent illness with severe consequences and emotional disturbance in their lives. This supports previous studies, where CVD is perceived as having a moderate to severe emotional and cognitive impact on patients' lives [26 - 28].

The literature identified the cognitive and emotional representations of symptoms associated with a patient's decision to seek medical help [3]. More particularly, a retrospective study found that their perception of illness influences the decision [29]. This is the only study that could be found that associated a common-sense model of illness perception and the delay in seeking medical help among CVD patients. In our study, the association between illness perception and the delay was limited to the illness coherence component. The methodological and socio-contextual variation between the studies could explain the differences in the results. For example, illness perception has been associated with various health outcomes among CVD patients, such as adherence to medical treatment among patients with HTN [30], secondary health behaviours following MI or open heart surgery [31], and hospital readmission [28].

The study revealed that college education, cardiac catheterization history, and comorbidities such as asthma and DM are significantly correlated with seeking medical help. However, the multilinear regression results revealed that college education, cardiac catheterization, and asthma were independent predictors of seeking medical help. Studies in this area disagree about the factors influencing delay. Variations in contextual factors, such as participants' sociodemographic and clinical factors, led to this inconsistency [7, 12, 23].

Although our study found that a low educational level is associated with early seeking medical attention, a previous study found that delay was more likely among patients with less education [4]. Other studies found a correlation between higher education levels and accurate interpretation of CVD symptoms, resulting in early seeking medical help (Ribeiro *et al.*, 2014).

This study found a weak, non-significant negative association between patients' age and delay in seeking medical help, which contradicts a recent finding that younger patients, regardless of their gender, tend to delay their call for help [22]. After we controlled for confounding variables, like other researchers [29], we found no association between participants' age and delay.

A previous study found that a history of cardiac disease (MI) or being identified as at high risk of CVD, HTN or hypercholesterolemia does not influence the time taken in seeking medical care [7], congruent with our study. However, some studies revealed that a previous history of CVD would increase patients' knowledge about their health condition and would be associated with a greater likelihood of early seeking medical help [32, 33]. A similar review concluded that delay in seeking medical help was associated with a lack of knowledge of the symptoms [4]. Similarly, we found asthma to be an independent predictor for early seeking medical help. A

possible explanation might be that patients with asthma are at great risk of respiratory problems during the COVID-19 pandemic; concurrently with the data collection stage, it may be assumed that individuals with such comorbidities would be more aggressive in seeking treatment [19].

The literature does not provide consistent agreement on the factors associated with delay in seeking medical help, particularly socio-demographical and clinical factors, which might be related to methodological variations. For example, some studies collected information retrospectively from medical records and patient interviews following hospital discharge [29]. Our study collected delay times from patients who were susceptible to recall bias; we reported delay times by hour and treated it as a continuous variable. Other studies converted it to a categorical variable with various cutoff points based on participants' responses [4, 23].

7. STRENGTHS AND LIMITATIONS

The findings in this study are subject to some limitations. First, self-reported data is subject to recall, response, and social desirability biases; the present study relied on patient recall without any measure to confirm the accuracy (reviewing medical records or elevated cardiac enzymes among MI patients). Second, the study was conducted during the COVID-19 pandemic. Participants' perception of the impact of COVID-19 was not investigated and could affect their decision to seek medical help. Third, the participants were recruited only from the cardiac wards, which may have compromised the sample. In addition, this study did not examine contextual factors such as participants' physical location and level of social support. It should be noted that the study included participants in UAE who represented various nationalities and had various health perceptions.

Despite its limitations, this study offers a preliminary insight into patients' illness perception of CVD and factors that predict a delay in seeking medical help. Future research could evaluate this issue employing a wide range of variables, as the predictor in this study explained only 16% of the variation in decisions to seek medical assistance. This data will be necessary for developing public education to encourage patients to seek medical help early, thereby reducing the consequences of CVD in terms of mortality and morbidity.

CONCLUSION

Our results suggest that a tailored education programme is needed, especially among CVD patients with underlying medical conditions. This programme should highlight the importance of symptom recognition (illness coherence), the benefits of early seeking medical help, and clear any misconception about controlling CVD risk factors (illness perception of personal control). Our findings showed that participants perceived their CVD as a life-threatening condition that would last for a long time and significantly impact their physical and emotional health. Such findings suggest that a combined approach to intervention, including behavioural, clinical, educational, and psychosocial components, is needed for to encourage CVD patients seek medical help quickly, and to improve adherence to treatment plans after hospital discharge.

LIST OF ABBREVIATIONS

ACS	= Acute Coronary Syndrome
CVD	= Cardiovascular Disease
UAE	= United Arab Emirates
DM	= Diabetes Mellitus
MI	= Myocardial Infarction
PCI	= Percutaneous Coronary Intervention
COVID-19	= Coronavirus Disease
MOHP	= Ministry Of Health And Prevention
IPQ	= Illness Perception Questionnaire
SPSS	= Statistical Package for Social Sciences

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was conducted with the approval of the Research and Ethical Committee of the Higher Colleges of Technology and MOHP (MOHAP/DXB-REC/JJF/NO.9 2020). Consent form was obtained from participants, who were informed that their participation was voluntary and would not affect their current treatment.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All procedures performed in studies involving human participants were in accordance with the ethical standards of institutional and/or research committee and with the 1975 Declaration of Helsinki, as revised in 2013.

CONSENT FOR PUBLICATION

Informed consent was obtained from all participants.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIALS

The datasets during the current study are confidential and available from the corresponding author [S.M] on reasonable request.

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CONFLICT OF INTEREST

The authors declare no conflict of interest financial or otherwise.

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